

Melvin Butte Forest Management Project

Silvicultural Marking Guide and Rx fire Implementation Guidelines

Setting ID (stands) 06010505380015455, 06010505380011776, 06010505380011777

EA Unit #30

Stewardship Imp Units 20

Fuels Imp # TBD

Updated 6/8/2015

Management Allocations:

LRMP: Front Country Seen/Unseen MA 18

NWFP: Matrix

EA Treatment Name: Thinning

Secondary treatments: Underburn (prescribed), pile burning, mastication

Unit 20 Site Description:

Acres: 59

Aspect: Northeast to flat

Slope: 0-35%

Plant association- mixed conifer/snowbrush-manzanita
CWS1-12 (Volland 1982).

All aged ponderosa pine dominated stand that had selective overstory ponderosa pine >40 years ago.

The numbers in table 1 (Lidar strength) does not provide species composition or level of dead/ dying. Ground reconnaissance indicated ponderosa pine tended to dominate the flat aspects and white fir dominating areas on the bottom to mid slope position. The unit has a high 1000hr fuels component with tonnage >15 tons/acre. which is coming from the overstory ponderosa pine as well as the small root rot pockets.

Unit 20 assumptions

Past management-

The stand had selective removal of large ponderosa pine (overstory removal-OSR) 40-60 years ago. This past selective OSR removed ~60-100ft² basal area per acre (BA/acre) of ponderosa pine. Fire suppression of natural and/or human ignitions has occurred from early in the 20th century.

Existing condition-

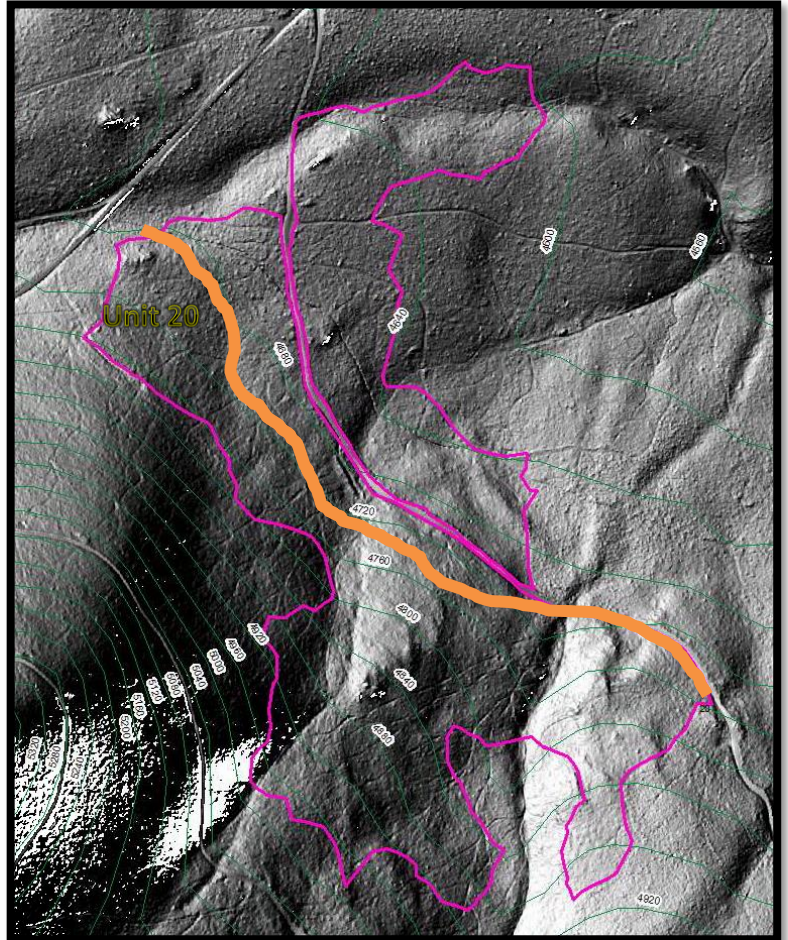


Figure 1- Unit 20 with approximate line (and west) where white fir surrounds pine to be managed for mistletoe barriers.

Table 1-Stand statistics derived from Lidar determined tree points.

Stewardship Imp Unit #	Acres	Avg Diameter (inches)	STD Dev Diam (inches)	Quadratic Mean Diameter (inches)	BA/acres (0- 8.9" dbh)	BA/acres (5- 8.9" dbh)	BA/acres (9- 20.9" dbh)	BA/acres (21+ dbh)	BA/acres total	TPA (0- 4.9" dbh)	TPA (5- 8.9" dbh)	TPA (9- 20.9" dbh)	TPA (21+ dbh)	Total Number of trees/acres	Plant Association Group (PAG)	Plant code	Current calculated SDI	SDI of trees >21" dbh
20	59	8.5	6.5	10.7	5	20	80	58	163	100	75	69	17	262	Mixed conifer dry	CWS1-12	292	74

Unit 20 stand is a multi-aged and multi-story stand with at least 3 separate age classes. The stand's species composition diverges as you move towards the NE slopes. At the bottom of the unit ponderosa pine is dominant whereas when you move up the slope regeneration is dominated by white fir. The unit contains high to moderate levels of mistletoe across the unit. The unit is currently well above the upper management zone and it is likely this that is a contributing factor to the beetle presence and overstory ponderosa pine attenuation. Within the unit there is a remnant component of ponderosa pine that have old growth characteristics (Van Pelt 2008). These old growth pine are configured as single trees and in groups (clumps). They tend to be big in size (>21 inches) however there are scattered smaller old growth pine that are subordinate in clumps and on occasion as individuals. Under the current trajectory, the stand will continue to lose over- and midstory pine with replacement occurring with ponderosa and to a lesser degree white/grand fir. Overall tree species proportion is around 50% fir and 50% ponderosa pine and increases slightly to more fir when considering smaller size classes and the bottom to mid slope positions.

Conifer heights – range from 0~150ft tall.

Diameters- range from 0-40" plus

Ages- range from 0-350yrs plus

Tree species- ponderosa pine, grand/white fir

Up slope portion-

This general area can be described as having interactions of past logging, fire exclusion and dwarf mistletoe. There are several small patches of dead dying white fir from root rot influences. The remaining overstory ponderosa pine all have high levels of dwarf mistletoe with many of these trees fading and dying.

Down slope portion-

This general area can be described as having an old growth component with an understory second growth component. This area contains both overstory and understory influences of dwarf mistletoe.

Goals of marking

- Maintain fire climax ponderosa pine including old forest structure elements and create new growing locations
- Utilize white fir trees in order to contain potential dwarf mistletoe influences.
- Thin from below increasing average stand stem diameter
- Create and retain trees in clumps or in a random distribution of stems.
- Remove where possible else isolate and confine dwarf mistletoe in the unit
- Retain healthy ponderosa pine saplings and poles where they exist

Unit 20 Marking guidelines-

- 1) No marking of ponderosa pine trees >20.9

- 2) Retain all lodgepole pine
- 3) Retained basal areas should range across the unit from 10-140 sqft BA/ac (average 70)
- 4) Find opportunities to “isolate and confine” overstory contributions of dwarf mistletoe. The southern/western portion of the unit allows these opportunities. Barriers to spread is fundamental to consideration (non-host species). Leave all white fir (all sizes) from near (as a ring around) ponderosa pine isolates and/or clumps within dwarf mistletoe spread distance. Generally 30-50ft will encompass the leave tree zone, but this area may be larger dependent upon specific arrangements and locations of pine/fir. Leave tree zone is dependent upon several factors including slope distance, pine/fir canopy relationship, and health and presence of mistletoe.
- 5) Reduce stocking between these fir-surrounded ponderosa pine retaining any ponderosa pine (all sizes) that are free or have a low infection (in lower canopy) of mistletoe. In effect small low density areas will be created between the ringed ponderosa pine.
- 6) Outside of the ringed ponderosa pine, retain any white fir that can help mitigate spread to adjacent trees/areas. Outside of this consideration remove remaining white fir.
- 7) In the downslope/ flat portion of the unit thin to remove dwarf mistletoe retaining the largest and healthiest ponderosa pine.
- 8) Ponderosa pine thinning will be generally from below unless thinning is done to “isolate and confine” Thinning in these locations will be generally from below. Only choose a larger tree over a small one in order to create clumpy structure or reduce any dwarf mistletoe that may be present.
- 9) Identify and retain large trees, old tree clumps, large snags, and other ecologically important structural elements of the stand that should be preserved. Old trees are those at least 150 years old and can be identified by physical characteristics such as ponderosa pine with orange, plate bark, true fir with thick, furrowed bark, and all trees with complex forms, including broken or malformed tops and thick upper branches. Use the Van Pelt (2008) guidelines to assist with old tree identification or fir guide (attached here). Old trees do not necessarily have large diameters.
 - a. While most of the fir in the stand have encroached into the stand be on the lookout for fir trees that are contemporaries to the old growth ponderosa pine. Physical appearances include deep bark furrows, high live branches and darker colored bark. These trees may be >150 years old and should be retained. Generally trees that are >28” dbh should be examined for age.

Sub Merchantable material

This material will have a DxD prescription with supplemental LTM marking

Designation by Description

- Retain all lodgepole.
- Remove all white fir not leave tree marked (orange).
- Cut all sub-merchantable ponderosa pine (trees 5-9” dbh) not designated “leave” by orange paint.
- Retain all old growth ponderosa pine (orange platy bark).

Supplemental LTM Marking- Guidance for marking

Tree Selection and Location

Due to potential mistletoe presence and potential for spread, “leave” and “take” trees from above (commercial trees) will be used to guide the determination of leave trees in the 5-9” dbh classes. Envision the commercial sized trees removed and then envision which trees will be retained. Selectively choose the under- mid-story ponderosa pine based on what would be retained/removed. For example, in areas that have a high proportion of commercial removal retain 5-9” dbh ponderosa pine

at the upper end of the TPA range. In areas that have a high retention of large >21" dbh trees LTM to the lower end of the TPA range. Another important element is to consider the post-sale mistletoe work which will include pruning and/ or girdling of high DMR rated trees.

5-9" dbh size class- designated reserve trees- handled through supplemental marking

Retain between 5-40 TPA. Form and vigor take precedence over spacing. Currently there are about 75 TPA in this size class (all species). 5 TPA equals about a 90'x90' ft spacing while 40 TPA equals about a 32'x32' ft spacing.

Where possible retain all clean ponderosa pine in this size class up to the upper end of 40 TPA. Where infection levels are high (≥ 3 DMR)

It is desirable to strategically locate and identify these trees, if they occur as a small group choose the most disease free and largest possible.

0-5" dbh size class

Retain all ponderosa pine except those with high mistletoe infections. Retain 40-170 TPA (32ftx32ft- 16ftx16ft). Form and vigor take precedence over spacing with some areas absent of leave trees when highly diseased.

Post Sale Activities

Pruning roadside ponderosa pine

Prescribed fire

Planting ponderosa pine, Douglas-fir on 16*16ft spacing (with variation of distances).

/s/ William Brendecke- certified silviculturist- 6/8/2015